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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/197,012	11/20/1998	DANIEL B. ROITMAN	10981133-1	9808

22878 7590 11/28/2001

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EXAMINER

GUHARAY, KARABI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 11/28/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/197,012

Applicant(s)

ROITMAN ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Amendment B, filed on 8/3/01 and preliminary amendment C, filed on 9/4/01, have been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In this case, independent claims 1 and 10 recite a limitation "a thickness sufficient to prevent excessive current in the vicinity of a short in said organic light emitting device". Here, it is not clear how much thickness is sufficient to prevent excessive current in the vicinity of a short. Further the specification does not provide any insight as to what extend of value of the thickness of the self- limiting structure is sufficient to prevent excess current in the vicinity of a short. This renders the claim indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (US 5920080).

Regarding claim 1, Jones discloses an organic light emitting device (10 of Fig 4) comprising an electrode (251, 202 of Fig 3, lines 14-15 of column 9, lines 39-41 of column 8) a current self-limiting structure (253 and 203 of Fig 4, lines 43-44 of column 8, and 19-20 of column 9), and an organic stack (300 of Fig 5, lines 10-12 of column 9) between the electrode (251) and the current limiting structure (203, See Fig 4), applied in a thickness. Though Jones does not explicitly disclose that the layers 253 and 203 are current self-limiting structure, it is inherent since layers are made of current self-limiting material (see lines 43-44 of column 8), thus prevent excessive current in the vicinity of a short in the organic light emitting device, since this is the inherent property of the current self limiting material.

Regarding claim 2, Jones discloses that the current self-limiting structure (253 of Fig 3) resides in contact with the electrode (251 of Fig 3).

Regarding claim 3, Jones discloses that the current self-limiting structure (253 and 203 of Fig 4) applied as a patterned lattice structure over the electrode (lines 21-22 of column 7, see Fig 8).

Regarding claim 4, Jones discloses that the current self-limiting structure (203) is applied as a grid defining windows in which the electrode (202 of Fig 4) is applied.

Regarding claim 5, though Jones does not specifically mention that the current self-limiting structure (253 and 203 of Fig 4) comprises an anisotropically conductive

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material, it is inherent since Jones used barium titanate as the current limiting component, which is an anisotropically conductive material (see US 5414403).

Regarding claim 6, Jones discloses a photoresist material in contact with the electrode (202 of fig 4) and the current self-limiting structure (203 of Fig 4, see lines 51-54 of column 8).

Regarding claim 7, Jones discloses that the current self-limiting structure (203 of Fig 4) resides between the electrode (202 of Fig 4) and a conducting layer (not shown in Fig, see lines 56-59 of column 8).

Regarding claim 8 Jones discloses that the conducting layer is embedded within the current self-limiting structure (203 of Fig 4, see lines 56-59 of column 8).

Regarding claim 9, Jones discloses that the conducting layer resides over the current self-limiting structure (lines 56-59 of column 8).

Claim 10 recites essentially the same limitation of claim 1. Thus claim 10 is rejected as claim 1 (see rejection of claim 1). In this case, Jones does not explicitly specify that the organic light-emitting device has increased the reliability. But it is inherent since Jones uses current self-limiting component in the device.

Claim 11 recites essentially the same limitation of claim 2. Thus claim 11 is rejected as claim 2 (see rejection of claim 2).

Claim 12 recites essentially the same limitation of claim 3. Thus claim 12 is rejected as claim 3 (see rejection of claim 3).

Claim 13 recites essentially the same limitation of claim 4. Thus claim 13 is rejected as claim 4 (see rejection of claim 4).

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Claim 14 recites essentially the same limitation of claim 5. Thus claim 14 is rejected as claim 5 (see rejection of claim 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US 5920080).

Regarding claim 15, Jones discloses an organic light emitting device (10 of Fig 4) comprising an electrode (251, 202 of Fig 3, lines 14-15 of column 9, lines 39-41 of column 8) a current self-limiting structure (253 and 203 of Fig 4, lines 43-44 of column 8, and 19-20 of column 9), and an organic stack (300 of Fig 5, lines 10-12 of column 9) between the electrode (251) and the current limiting structure (203, See Fig 4). Though Jones does not explicitly disclose that the layers 253 and 203 are current self-limiting structure, it is inherent since layers are made current self-limiting material.

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But Jones fails to disclose that the current self-limiting structure located non-adjacent the organic stack.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange cathode layer (251) and CSL layer (253) so that CSL layer of Jones's device is non adjacent to organic stack 300, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In Re Japikse*, 86 USPQ 70.

Claim 16 is rejected as claim 2 (see rejection of claim 2).

Claim 17 is rejected as claim 3 (see Rejection of claim 3).

Claim 18 is rejected as claim 4 (see rejection of claim 4).

Claim 19 is rejected as claim 5 (see rejection of claim 5).

Claim 20 is rejected as claim 6 (see rejection of claim 6).

Claim 21 is rejected as claim 7 (see rejection of claim 7).

Claim 22 is rejected as claim 8 (see rejection of claim 8).

Claim 23 is rejected as claim 9 (see rejection of claim 9).

Claim 24 is rejected as claim 10 (see rejection of claim 10).

Claim 25 is rejected as claim 11 (see rejection of claim 11).

Claim 26 is rejected as claim 12 (see rejection of claim 12).

Claim 27 is rejected as claim 13 (see rejection of claim 13).

Claim 28 is rejected as claim 14 (see rejection of claim 14).

Response to Arguments

Applicant's arguments filed 8/9/01 have been fully considered but they are not persuasive.

In response to applicant's argument that the transition layer 253 has a thickness of approximately 10nm, which is incapable of acting as a current self-limiting layer because it is too thin, examiner could not find any support for this statement. First of all, applicant does not disclose in the specification what thickness is suitable of acting as a current self-limiting layer. Moreover, why a layer of 10nm thickness of current limiting material is incapable of current self-limiting? There is no discussion in the specification of the criticality of the thickness.

In specification page 13, Line17, applicant discloses that CSL structure is relatively thin. Thus it is not clear which thickness will be considered to be thin not to have current self-limiting capability. Thus since the sufficient thickness of the CSL layer to prevent excessive current in the vicinity of the short is not defined, having a layer of same material (current self limiting material), CSL layer of Jones' device will intrinsically function as a current self limiting layer.

Regarding claim 3 and 4, examiner would like to point out that Jones clearly shows arrays of OLEDs (10) arranged in matrix (Fig 8, line 46 of column 7) together with matrix lines 801 or 802 carrying current or voltage pulses. Each OLED are arranged in lattice structure, consequently the current limiting structure is applied as a patterned lattice structure over the electrode.

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Regarding claim 5, examiner once again points out that though Jones does not explicitly mentioned that the layer 203 and 253 are current self-limiting structure, it is inherent since layer 203 is made of a current self-limiting material as disclosed by applicant.

Regarding claim 6, Jones discloses that conductor 202 having slopes is achieved through resist loss, which inherently teaches a resist layer in contact with electrode and layer 203.

As long as evidence of record establish inherency, failure of those skilled in the art to contemporaneously recognize an inherent property, function or ingredient of a prior art reference does not preclude a finding of anticipation (see MPEP 2131.01 (III)).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

R.G.
Karabi Guharay
Patent Examiner
Art Unit 2879


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